

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO**

UNITED STATES OF AMERICA,

Plaintiff,

vs.

NO. CR 05-0924 RB

LARRY LUJAN,

Defendant.

MEMORANDUM OPINION AND ORDER

THIS MATTER came before the Court on Defendant's Motion to Exclude Expert Testimony of Karen A. Lanning and Request for Evidentiary Hearing Pursuant to *Daubert* and *Kumho Tire* (Doc. 839), filed May 25, 2011. The Court held an evidentiary hearing on the motion on July 13, 2011. Having considered the motion and the parties' arguments at the hearing, the record, and the relevant law, and being otherwise fully advised, the Court grants the request for an evidentiary hearing but otherwise denies the motion.

I. The United States' proffer regarding Karen A. Lanning

The government proposes to call as an expert witness Ms. Karen A. Lanning, a Supervisory Physical Scientist, Unit Chief, and forensic scientist in the FBI's Evidence Control Unit and Trace Evidence Unit. *See* Doc. 820 at 3. Ms. Lanning has degrees in biology and chemical science, with extensive forensic education, training, and experience in hair and fiber analysis over the past 20 years, and she has passed national proficiency tests in hair and fiber analysis every year since her certification as a forensic scientist. *See id.*, Ex. 1 at 22-24; July 13 hearing. Ms. Lanning has been an instructor and training manager in hair and fiber analysis and in forensic science since 1998 for the FBI, other law-enforcement agencies, and universities. *See* Doc. 820, Ex. 1 at 23-24. Ms. Lanning has examined trace evidence in over 2500 cases and has testified as an expert in hair and

fiber analysis in over 140 cases in state and federal courts, including in a death-penalty case. *See* July 13 hearing.

At the hearing, Ms. Lanning fully explained the science of fiber analysis and comparison, and the process by which she and her unit conduct testing on materials submitted for forensic analysis. She cited scientific articles and research that have been peer-reviewed showing that forensic fiber analysis and comparison is widely accepted within the scientific and forensic community, including federal, state, and international laboratories. *See* July 13 hearing and Ex. 4. She presented evidence that a national testing service has shown that 206 fiber analysts had correctly identified and compared fiber samples with 100% accuracy, using the techniques and equipment that she uses. Ms. Lanning explained that the National Academy of Science¹ has not questioned the reliability or the methodology used for fiber analysis, but has highlighted the fact that fiber analysts cannot say with certainty that a particular fiber came from a known sample of similar fibers to the exclusion of all others.

Ms. Lanning explained in detail the methodology she used in processing and identifying the fiber she found on the victim's shoes and in comparing it with a "known" fiber sample - the blanket that witnesses said Lujan used to cover the victim's body and left at the Quintana home. Ms. Lanning used "standard protocols" established by the FBI trace-evidence unit laboratory operations manual, which are accepted as proper standards in the scientific community, in examining, measuring, and comparing the fibers and their properties using various microscopic equipment and techniques. *See* July 13 hearing and Ex. 4. Two of the instruments she used to analyze and compare the fibers automatically recorded some of the fibers' properties, independent of human perception

¹ The Committee on Identifying the Needs of the Forensic Science Community at the National Academy of Sciences prepared a report entitled *Strengthening Forensic Science in the United States: A Path Forward* (2009) (hereinafter "NAS" Report).

or input, and the instruments were calibrated using standard scientific protocols before her examination. *See id.*

Ms. Lanning is expected to testify, “to a reasonable certainty,” that

a blue to white colored polyester fiber was found on specimens Q4-Q5 (two [of the victim’s] shoes) whose fibers exhibits the same microscopic characteristics and optical properties as the blue to white colored polyester fibers comprising specimen Q46 (blanket [that the Defendant allegedly used to cover the victim]) and as such, the fiber is consistent with originating from specimen Q46 (blanket).

Doc. 820 at 3, July 13 hearing. The United States represents that Ms. Lanning will not testify that “the single blue and white fiber definitely came from . . . the fibers used in the construction of the blanket,” but that she will testify that “the fiber found on Q4/5 has the same class characteristics as the fibers used to make Q-46.” Doc. 870 at 6. The United States contends that “[t]he fiber information is corroborative of the version of events relayed by others who accompanied Grauke and Lujan from San Antonio, Texas to Dona Ana County; or who saw them together at the Dona Ana County residence.” *Id.* at 7. Specifically, the United States contends that it will also corroborate a co-defendant’s testimony “that he saw defendant Lujan cover Dana Joe Grauke II (the victim) with a blanket when Grauke was in the back of a jeep;” two witnesses’ testimonies that, when Lujan showed them Grauke’s body, it was covered with a blanket; that the blanket in question (Q-46) was left behind at the witnesses’ house after the night of the murder; and that authorities recovered the blanket. *Id.* at 8.

II. Applicable legal standards.

When a trial court is “[f]aced with a proffer of expert scientific testimony, [] the trial judge must determine at the outset . . . whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue.” *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592 (1993). Thus, relevance is a critical issue in determining

admissibility. *See id.* at 591; *United States v. Garcia*, 635 F.3d 472, 476-77 (10th Cir. 2011). Relevant expert testimony must “logically advance[] a material aspect of the case,” *Norris v. Baxter Healthcare Corp.*, 397 F.3d 878, 884 n. 2 (10th Cir. 2005), and be “sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute,” *Daubert*, 509 U.S. at 591 (quotation marks omitted). In assessing whether testimony will assist the trier of fact, a court may consider several factors, including whether the testimony “is within the juror’s common knowledge and experience,” and “whether it will usurp the juror’s role of evaluating a witness’s credibility.” *United States v. Rodriguez-Felix*, 450 F.3d 1117, 1123 (10th Cir. 2006). “Rule 702 thus dictates a common-sense inquiry of whether a juror would be able to understand the evidence without specialized knowledge concerning the subject.” *United States v. McDonald*, 933 F.2d 1519, 1522 (10th Cir. 1991); *United States v. Becker*, 230 F.3d 1224, 1231 (10th Cir. 2000) (accord).

In addition, Federal Rule of Evidence 702 “imposes a special obligation upon a trial judge to ‘ensure that any and all scientific testimony . . . is not only relevant, but reliable.’” *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 147 (1999) (quoting *Daubert*, 509 U.S. at 589). In *Kumho Tire*, the Supreme Court held that Rule 702 applies to “all expert testimony.” *Id.*

The 2000 amendments to Rule 702 codified the *Daubert* and *Kumho* “gatekeeping function,” and the Rule currently reads:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702 (2011).

The party proffering the expert testimony bears the burden of proving by a preponderance

of the evidence that the expert's testimony is admissible pursuant to Rule 702. *See United States v. Baines*, 573 F.3d 979, 985 (10th Cir. 2009). If the expert is sufficiently qualified and the proffered testimony is relevant, the court must determine whether the expert's opinion is "reliable" under Rule 702's three areas of inquiry –the expert's data, methodology, and application of the method to the data. *See id.*; *United States v. Nacchio*, 555 F.3d 1234, 1241 (10th Cir. 2009) (en banc); *Norris*, 397 F.3d at 884 (stating that, in determining reliability, the district court must decide "whether the reasoning or methodology underlying the testimony is scientifically valid."). The "language 'facts or data' is broad enough to allow an expert to rely on hypothetical facts that are supported by the evidence." Fed. R. Evid. 702 (Advisory Committee Note to 2000 Amendments) (citing original Advisory Committee Note to Rule 703). The "emphasis in the amendment on 'sufficient facts or data' is not intended to authorize a trial court to exclude an expert's testimony on the ground that the court believes one version of the facts and not the other." *Id.*

The "method/principles" inquiry is guided by four nonexclusive factors: "(1) whether the particular theory can be and has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; and (5) whether the technique has achieved general acceptance in the relevant scientific or expert community." *Baines*, 573 F.3d at 985 (citing *Daubert*, 509 U.S. at 593-94). Because "the gatekeeping inquiry" is "tied to the facts of a particular case," the above factors "may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony." *Id.* (internal quotation marks omitted, quoting *Daubert* and *Kuhmo*). The Supreme Court has emphasized that this list is neither definitive, nor exhaustive. *See Kumho Tire*, 526 U.S. at 141-42. Although, under Rule 702, the court must ensure that "the witness has applied the principles and methods reliably

to the facts of the case,” a trial court’s focus generally should not be upon the precise conclusions reached by the expert, but on the methodology employed in reaching those conclusions. *See Daubert*, 509 U.S. at 595.

The “application” inquiry focuses on the expert’s link between the facts or data and his or her conclusion. Again, the focus is not on the conclusion alone.

[C]onclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.

General Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997). And while the party proffering the expert opinion must demonstrate both that the expert has employed a method that is scientifically sound and that the opinion is

based on facts which enable [the expert] to express a reasonably accurate conclusion as opposed to conjecture or speculation, . . . absolute certainty is not required. The plaintiff need not prove that the expert is undisputably correct or that the expert’s theory is ‘generally accepted’ in the scientific community. Instead, the plaintiff must show that the method employed by the expert in reaching the conclusion is scientifically sound and that the opinion is based on facts that satisfy Rule 702’s reliability requirements.

Goebel v. Denver & Rio Grande W. R.R. Co., 346 F.3d 987, 991 (10th Cir. 2003) (internal quotation marks and citations omitted).

III. Analysis.

At the hearing, the Defendant principally based his attack on the chain-of-custody process that he found lacking, on a preference for blind testing noted in the NAS article, and on Ms. Lanning’s inability to conclusively link a sample fiber to a specific source. But these issues go to the weight of Ms. Lanning’s testimony and not to the reliability of the methodologies she used.

In his brief, Defendant contends that Ms. Lanning's proposed testimony lacks probative value and is too unreliable to be admitted as relevant. But Defendant does not develop his assertion that Ms. Lanning's testimony is not relevant other than to argue that the NAS Report stated that none of the tests for analyzing fibers are "suitable for individualizing fibers (associating a fiber from a crime scene with one, and only one, source) and that fiber evidence can be used only to associate a given fiber with a class of fibers." Doc. 897 at 4 (quoting NAS Report at 161). Defendant contends that "this evidence [– that the fiber from the victim's shoes is consistent with originating from the blanket she was given–] seems to push the outer boundaries of relevance." *Id.* Defendant also argues that "the probative value that fibers found on the shoes 'are consistent with' fibers from the blanket depends on the rate at which such fibers are found on blankets other than the one identified at Q46." Doc. 839 at 6. The Court disagrees.

The fact that a fiber found on the shoes of the victim has the same class characteristics as the fibers of a blanket that witnesses will testify that Lujan used to cover the victim's body and later left at a house is probative notwithstanding the fact that there may be other blankets in the world containing similar fibers, and can corroborate the United States' witnesses' testimony, thus aiding the jury in resolving a factual dispute. The testimony and evidence is relevant and probative.

Defendant argues that "the jury is likely to overvalue the testimony and assume that it means the source of the fibers on the shoes was the blanket," Doc. 839 at 6, when that fact has not been established to a certainty, *see* July 13 hearing. But the nature of circumstantial evidence is that, in conjunction with other circumstantial or direct evidence, it may assist a jury in arriving at a factual conclusion even though the particular piece of evidence itself does not establish that fact to a certainty. The weight the jury should give to Ms. Lanning's testimony may be explored at trial so that the jury fully understands its import.

The Court finds and concludes that the United States has established that Ms. Lanning qualifies as an expert in fiber analysis and comparison by her knowledge, skill, experience, training and education. She will testify to “specialized knowledge” that “will assist the trier of fact to understand or determine a fact in issue,” Rule 702, because microscopic fiber analysis and comparison is not “within the juror’s common knowledge and experience,” *see Rodriguez-Felix*, 450 F.3d at 1123. Ms. Lanning’s testimony will not “usurp the juror’s role of evaluating a witness’s credibility.” *See id.*

The Court further finds and concludes that the testimony is reliable under *Daubert* and Rule 702 in regard to the data Ms. Lanning examined, her methodology, and her application of the methodology to the data. At the hearing, the Defendant attempted to challenge the “reliability” of the data – i.e., the “known” blanket sample – by arguing that it may not be the actual blanket that Lujan allegedly used to cover the victim and left at the Quintana house; that Ms. Lanning did not know what “environmental degradations” the blanket had gone through between the time of the murder and the time the blanket was recovered; and that she also did not know whether that was the only blanket of that type at the Quintana house and admitted that there may be hundreds of blankets like it in the world. Those issues, however, do not go to the “sufficien[cy]” of the blanket sample that Ms. Lanning was given as a “known” sample or to her methodology. *See Nacchio*, (noting that “[r]eliability questions may concern the expert’s data,” but noting that Rule 702 requires testimony to “be ‘based upon *sufficient* facts or data’”) (italics added). As the 2000 notes to Rule 702 state, Ms. Lanning was entitled to rely on information given to her that is supported by some evidence. She was given a sufficient amount of data to test. And as Ms. Lanning testified at the hearing, whether the blanket was found in the jeep or in a house did not affect her fiber analysis and comparison studies. The data Ms. Lanning used was sufficient to give a reliable result.

The Court finds and concludes that the United States has demonstrated that Ms. Lanning's reasoning and methodology underlying her testimony is scientifically valid and reliable. Ms. Lanning credibly testified that fiber analysis can be, and has been, thoroughly tested; that the various methodologies she used have been subjected to peer review and publication; that known or potential rates of error are extremely limited when correct protocol is used by proficient technicians like herself – as demonstrated by the 2007 national test results; that there are industry and scientific standards controlling the methodologies' operations, which she used in her analysis; and that fiber analysis has been accepted in the relevant scientific and industrial communities. *See Daubert*, 509 U.S. at 593-94. Ms. Lanning presented a cogent link between the data she was given, the methodologies she used to compare the data, and her conclusion that, to a reasonable certainty, the fibers in the two samples were consistent with one another. Thus, she demonstrated that her expert opinion was "based on facts which enable[d her] to express a reasonably accurate conclusion as opposed to conjecture or speculation." *Goebel*, 346 F.3d at 991.

IT IS ORDERED that the Defendant's motion to exclude Ms. Lanning as an expert witness [Doc. 839] is DENIED.



UNITED STATES DISTRICT JUDGE